



PCE Retrospective - 1987

Reading Railway Station 1,600 space MSCP



Constructed on site in only 16 weeks PCE Ltd were an integral part of the project team helping to create the innovative design philosophy during the tender period through to the successful completion on site that gave Reading a new 12 split - level multi storey car park structure 30 years ago in 1987.

The first offsite engineered car park to be constructed in the UK giving column and wall free approaches for the internal floor to floor vehicle ramps, thus improving the customer experience and security, was achieved by using 16.0m span pre-tensioned cranked ramp double-tees. Another innovation was the use of profiled flange double tees of a similar length which peaked at mid span for the roof deck parking to provide drainage falls. At the time of construction the car park was also considered the largest precast concrete car park constructed in the country.

The 109m long by 62m wide structure made good use of architectural structural concrete with full height external columns, top level arch units and rectangular panels being cast with white cement and Derbyshire Spar aggregate, with some exposed aggregate faces. Brick faced spandrel units including ground level plinth wall units were manufactured using two different machine made brick types, all the panels being pre-pointed during the manufacturing process at the production factories.

Offsite engineered hybrid precast structural solution

Over 2,500 structural precast concrete units, delivered simultaneously on a just in time basis from 3 mainland UK based precast concrete factories, including 147 full height columns, 280 brick faced spandrel and plinth wall units and 29,600 sqm of double tees were erected on site in 16 weeks, saving 4 weeks against the original erection period of 20 weeks. The project also used precast stair wall panel construction, again considered to be innovative for car parks at the time.

Originally hand thrown bricks had been chosen and approved by the client, British Rail, to meet the requirements originally laid down by the Royal Fine Art Commission, the Local Architects Panel and Reading Civic Society, but during the superstructure package tender period proposals were put forward by PCE Ltd/ Dow Mac for the use of machine manufactured bricks which enabled the adoption a fully offsite engineered hybrid precast structural solution and this was agreed to. The key benefits this gave to on site programme reduction and improved quality of construction, with reduced on site labour and lorry deliveries in a busy town centre were key in the award of the project to the team.

The building was once dubbed *"the ultimate innovation in car park design"* and still provides Reading Railway Station with an architecturally pleasing and efficient car parking structural solution.

The Design and Build Superstructure Team for the project was PCE Ltd, John Laing Construction, Civil Engineering Division and Dow Mac Concrete Ltd who were also able to provide the client with a six month reduction in contract programme time compared to their competitors by use of their innovative proposals

30 years on if building the project again PCE Ltd would also be using their PreFastCore system for stair and lift-shaft construction and the insitu circular ramps would have been constructed in a similar manner for an MSCP they recently completed at Bracknell for MACE and as given in the cover article of the November 2017 Issue of Concrete Magazine.

Further information

For further information on this "historic" offsite engineered project and to find out how they are leading the design and build of offsite engineered Hybrid structures today, please contact PCE.

- » email: marketing@pceltd.co.uk
- » Telephone: 01827 301020
- » More about PreFastCore: <https://pceltd.co.uk/prefastcore/>
- » Latest PCE information: <https://pceltd.co.uk/>



A company owned by its employees

5 Mariner, Lichfield Road Industrial Estate
Tamworth, Staffordshire B79 7UL
Tel: 01827 301020. Fax: 01827 301021
Web: pceltd.co.uk
Email: enquiries@pceltd.co.uk

